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NEW CROP VARIETIES

No.7 — Summer 1965

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL EXTENSION SERVICE
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Outlined here are descriptions of new varieties of certain field crops. The purpose is to provide the extension worker with reference information for his use until fuller descriptions appear as in USDA Technical Bulletins or in the Registration Service of the American Society of Agronomy.

Assembled by FES with the cooperation of
State Extension Agronomists and ARS-USDA

Varieties Described

WHEAT	SOYBEANS	BERMUDAGRASS
Fulton	A-100	Midway
Riley	Adelphia	Tifdwarf
Moro	Amsoy	KENTUCKY BLUEGRASS
Nugaines	Dare	Cougar
Chris	Davis	RYEGRASS
Hume	Pickett	Florida Rust Resistant
Kaw 61	Semmes	Magnolia
McCall	Traverse	BLACK GRAMAGRASS
Sawmont	FLAX	Sonora
Triumph 64	Dillman	TALL FESCUE
Wanser	SAFFLOWER	Kenwell
OATS	Frio	GUAR
Florida 500	SESAME	Hall
Houston	Baco	Mills
Jefferson	Paloma	TOBACCO
Pennfield	COTTON	Burley 49
Santee	Hopicala	Coker 298
BARLEY	KENAF	N.C. 2326
Benton	Everglades 41	N.C. 2512
Dickson	Everglades 71	Speight G-36
Godiva	ALFALFA	Va. 115
Hypana	Europe	Va. 331
Tokak	Ladak 65	Md. 59
RICE	Norseman	Md. 609
Bluebelle	ARROWLEAF CLOVER	Florida 15
SORGHUM	Yuchi	
Plantation Pride		

Inquiry about any variety described here should be directed to the State releasing it.

Wheat

Fulton (C.I. 13358) is a soft red winter wheat developed by Ohio Agricultural Research and Development Center. It is described: Midseason maturity, midtall, strong purple stem. Auricles white, hairs sparse. Awless (extreme apical awns 10-15 mm). Spike fusiform, middense, erect to inclined. Glume glabrous, white, midlong, midwide; shoulder midwide, square to elevated; beak midwide, obtuse, 1-2 mm range. Kernel red, midlong, chalky, elliptical. Germ large. Adapted to Ohio and possibly the region to the east. The variety withstands the heaving type of winter injury very well. For a 7-year period it has outyielded any other commercial variety in Ohio. Milling and baking qualities are excellent. Fulton has no particular disease resistance except immunity to loose smut races presently in Ohio. Parentage is Butler x Thorne. Fulton is a selection from the bulk hybrid in F₅. It is similar in maturity, height, etc. to Seneca. Registered and certified seed are available.

Riley (C.I. 13702) is a white chaffed soft red winter wheat characterized by earliness, short stiff straw and resistance to loose smut. It was developed cooperatively by Purdue Experiment Station and USDA. In Indiana its yield has been similar to other high yielding varieties. It is short, like Monon, and about two days later in maturity, but offers greater straw strength than Monon or Knox 62. In winterhardiness it compares with Knox, Redcoat and Vigo; but is excelled in Indiana by Monon, Vermillion and LaPorte. Riley is resistant to the loose smut and soil borne diseases in Indiana. It is moderately susceptible to powdery mildew and to new races of leaf rust which appeared in 1964 and 1965. It has resistance to Hessian fly derived from Purdue W38, but is not effective against new races of Hessian fly that can attack Monon, Redcoat and Reed.

Moro is a white club wheat released jointly by the Oregon and Washington Experiment Stations and USDA. Its chief advantage over Omar is its resistance to stripe rust. Moro is also resistant to dwarf bunt and common bunt. Moro gives a high yield of good pastry flour; however, higher flour viscosity than for older club varieties may make it less suitable for some uses. Moro emerges fast and yields well under medium rainfall. When stripe rust is no problem, it yields about as Omar; when the disease is severe, Moro produces much the better yields. It's a mid-tall club variety, about two days earlier in maturing than Omar. Its kernels are white and chaff brown. Some 2600 bushels of registered seed are being distributed to qualified seed growers.

Nugaines, a sister selection to Gaines, is expected to replace the latter shortly in the Pacific Northwest. The two varieties are equal in yielding ability but Nugaines offers superior milling quality and test weight. The new variety has been released jointly by the Experiment Stations of Washington, Idaho, Oregon and USDA. Farmers will be able to get seed by the fall of 1967.

Greatest advantage of Nugaines over Gaines is in milling quality. Its test weight has averaged 1 to 2 pounds higher than Gaines. The two varieties are similar in appearance and growth characteristics. They are short-strawed, bearded wheats with long slender heads and white chaff. Both yield best when seeded fairly early and fertilized heavily with nitrogen.

Gaines and Nugaines are susceptible to stripe rust in the seedling stage. As the plants develop, however, tolerance to the disease increases, Nugaines showing more tolerance than Gaines under some conditions.

Nugaines, like Gaines, was developed by Dr. Orville A. Vogel, ARS plant breeder stationed at Washington State University. Ancestry of both varieties includes Norin-10, a semidwarf Japanese wheat; Brevor, a soft white winter wheat; Orfed, a soft white spring wheat; and Burt, a hard white winter wheat.

Chris is a beardless hard red spring wheat of medium height and maturity, with moderately stiff straw. It is resistant to prevalent races of stem rust, leaf rust and black chaff, and is moderately resistant to bunt. The test weight is very good, averaging about one pound heavier than the best of the present recommended varieties (Silkirk, Crim, Justin and Pembina). Yields have also been very good, exceeding the best recommended variety by about two bushels. Milling and baking characteristics have been satisfactory.

Chris was selected from a cross of Frontana-Thatcher³ x (Kenya 58-Newthatch x Thatcher²). It was developed cooperatively by Minnesota Agricultural Experiment Station and USDA. Entering yield trials in 1956, it appeared promising, but in 1960 it was damaged by a head and stem blackening complex similar to black chaff. In 1961, head rows were grown, resistant rows were bulked and the seed was increased in Mexico during the 1961-62 winter. No evidence of head blackening has been observed in the 3-year period 1962-64.

Some 150,000 bushels of certified seed will be available in 1966.

Hume (C.I. 13526) is a hard red winter wheat, developed by the South Dakota Experiment Station. It is similar to Nebred in milling and baking characteristics, plant height, heading date, maturity and hardness. It resists shattering. Its straw is stronger and test weight over two pounds heavier than for Nebred. Hume resists the prevalent races of the stem rust races 17, 15B-2 and 56, but it is susceptible to leaf rust, leaf blotch and wheat streak mosaic.

Hume has been a top yielder in Southeastern South Dakota; only a moderate yielder at the Central Substation; but at the South Central Substation it has yielded three bushels more than Nebred, the most popular variety, though less than Ottawa and Warrior. Hume should be adapted in all areas of the State where Nebred is grown. In the Northern Regional Performance Nursery tests Hume has proved to be widely adapted. It has usually ranked high in the region.

Hume is bearded, with brown chaff. The spike is fusiform, inclined and lax. Its glumes are glabrous, long, midwide. Kernels are hard, red, long and ovate with large germs. The crease is midwide and middeep. Cheeks are angular to rounded. The brush is large and midlong.

In milling tests Hume equaled Nebred and Omaha in 1963. In 1964 it equaled Omaha and excelled Nebred. In bread-baking qualities, Hume was equal to Nebred in 1963 and 1964 and to Omaha in 1964, but superior to Omaha in 1963. Hume had a shorter mixing time than both varieties in 1964, but all were equal in 1963.

Kaw 61 is the new name for currently certified Kaw in Kansas. The new terminology clarifies seed sources together with purity associated with source.

McCall, like Wanser, is a hard red winter wheat of Burt/Itana parentage, developed by the Washington and Idaho Experiment Stations and USDA. It is expected to replace Itana. McCall is a bearded wheat with white chaff. It emerges rapidly, has strong seedling vigor and is winter hardy. It is moderately resistant to stripe rust and to snow mold.

Sawmont (C.I. 13544) is an awned, solid-stemmed, hard red winter wheat developed by Montana Experiment Station and USDA. In tests it has shown good resistance to wheat stem sawfly and moderate resistance to stripe rust. Its use is recommended only in sawfly-infested areas. Elsewhere in Montana other varieties excel Sawmont both in yield and quality. Sawmont originated from a 1959 cross (Yogo x Rescue) x Marmin. 1965 seed stocks are exhausted.

Triumph 64 is the new name of the wheat variety formerly called "Rust Resistant Triumph". The change was requested by the Oklahoma Experiment Station. It is intended to prevent misleading farmers into thinking the variety is rust resistant. The change will also clarify future labeling of the product of foundation seed now being released by the station. Production of this variety is largely confined to Oklahoma, Kansas and Texas.

Wheat (cont.)

Wanser is a hard red winter wheat developed jointly from a Burt/Itana cross by Washington and Idaho Experiment Stations and USDA. It is expected to replace Itana. Fast emerging with strong seedling vigor, winter hardy and moderately tolerant to stripe rust, Wanser has outyielded other varieties presently grown in the area. It is a bearded variety with red chaff.

Oats

Florida 500 (C.I. 8023) is a short, medium early, high-yielding, stiff-strawed winter oat variety, well adapted to Florida. It was developed by the Florida Experiment Station from the cross Florad 5x Fulgrain-3 x Suregrain⁴ x Victorgrain² 2 x Bond x Fulghum 3 x Suregrain. Florida 500 has been outstanding for resistance to crown rust and for grain yield, in comparison with other varieties grown in the State. Its superiority in yield over Florad apparently resulted primarily from increased cold tolerance, whereas its superiority in yield over Suregrain, Radar 2 and other varieties resulted primarily from its crown rust resistance. Although short in height, Florida 500 tillers profusely, is very vigorous in vegetative growth, and produces more forage than Suregrain or Floriland. It is somewhat variable for intermediate and upright growth habit, which enhances its dependability for forage production. Florida 500 is nearly awnless, with plump, high-test-weight grain, and pale yellow to reddish-yellow in color.

Houston (C.I. 7912) is a short-statured, high-yielding, uniform stiff-strawed, semi-hardy winter oat variety adapted to the fall-sown oat area of south Texas. It was developed by the Texas Experiment Station in cooperation with the USDA from the cross Fulwin 2x Lee x Victoria 3x Red Rustproof⁴ x Victoria x Richland 5x Bond x Rainbow 2x Hajira x Joannette 3x Landhafer. It has greater lodging resistance than any other variety grown in Texas. Houston has a very high yield of high-test-weight grain. The kernels are medium size and light red or light gray in color. Houston is about as hardy as the popular Suregrain variety. It is resistant to Victoria blight, culm rot, and the common races of crown rust. Forage yields of Houston have been somewhat low in rust-free areas. It is expected that it will yield as much forage as other commercial varieties in the warm, humid areas in south Texas, where crown rust is often of major importance in determining the length of the oat-growing season.

Oats (cont.)

Jefferson (C.I. 7624) is a dual-purpose oat developed cooperatively by the Georgia Agricultural Experiment Station and by the USDA, from the cross Santa Fe x² Clinton 2x Wintok 3x Arlington. It is especially adapted to the State's upper Coastal Plain and Piedmont areas. Distribution of seed is being handled by Foundation Seeds, Inc., Athens, Ga.

In Georgia tests, grain and forage yields of Jefferson have equaled or surpassed those of other commonly grown varieties. It is similar to Roanoke and Fairfax, but produces heavier grain and threshes easily. Jefferson is suited to silage and grazing, producing an abundance of forage in late winter and early spring. It is resistant to Victoria blight, soil-borne mosaic, and common races of crown rust - but not to races 264 and 295. It has not yet been adequately tested for smut resistance.

Pennfield (C.I. 7561) is a spring oat variety developed by Pennsylvania Experiment Station and USDA. It is a selection from the cross Cleo x Improved Garry 5x Bonda 2x Hajira x Joannette 3x Santa Fe 4x Mo. 0-205. Pennfield is characterized by high yields of grain and straw and by exceptionally stiff straw of medium height. It has yielded significantly more than Garry, Russell, and the Clintland types in Pennsylvania and has been outstanding for resistance to lodging. It is a mid-season to late variety, limiting its production to cool climates. Pennfield is similar to Garry in adaptation and maturity. Its grain is large and white. Pennfield tends to have light weight kernels with a higher hull percentage than most recommended varieties. Its total yield of grain is very high. Pennfield is tolerant to barley yellow dwarf and resistant to many races of crown rust, stem rust, and the smuts. There are known races of the rusts and smuts which may attack it.

Santee (C.I. 7454) is a spring oat variety developed by the Nebraska Experiment Station in cooperation with the USDA. It was released in Nebraska, South Dakota, and Minnesota. Santee originated from a cross in 1947 of Clinton 4x Victoria 2x Hajira x Banner 3x Victory. The male parent is also known as Canadian Rust Lab (R.L.) 1692. Santee is an early maturing, short, stiff-strawed variety that heads about the same time as Andrew and Neal but about a day earlier than Nemaha and Nehawka. The panicle is short and compact with numerous twisted awns on the primary kernel. Kernels are large, plump and ivory colored. The kernels have a fair groat percentage - normally about one per cent below Andrew. The test weight is equal to or slightly above that of Andrew. Santee has some adult field resistance to crown rust. It is resistant to races 7 and 8 of stem rust and heterogenous for resistance to races 7A and 8A. Santee is susceptible to race 13A of stem rust, barley yellow dwarf and Septoria. In northeastern Nebraska, Santee has produced yields comparable to the highly yielding, later maturing varieties grown in that area.

Barley

Benton (C.I. 1227) is a mid-tall to tall, six-rowed rough awned spring barley with rather large coarse kernels. The spike is lax, mid-long, with long lemma awns. The lateral kernels tend to overlap. The kernels are white with long rachilla hairs. The straw is weak to moderately stiff and may lodge under conditions of high fertility.

Benton, a plant introduction from Abyssinia, was first grown at the USDA Plant Introduction Station at Chico, California in 1917. Its resistance to barley yellow dwarf virus was first identified in California tests in 1951. After its introduction into Oregon where now being released, there, it was observed to have excellent resistance to the yellow dwarf virus strains present in the Willamette Valley.

Benton is adapted to the spring barley areas of the Willamette Valley where barley yellow dwarf disease is serious. It will be used as a feed barley replacing Trebi, Hiland and Hannchen.

In yield trials since 1960 at Corvallis, Benton has averaged 56.1 bushels compared to 49.3 bushels for Hannchen. The greatest difference has been noted in seasons when yellow dwarf virus was serious.

Seed was distributed for increase in 1965.

Dickson (C.I. 10968) is a 6-rowed spring barley selected from the cross of Traill (C.I. 9538)² x B112 (C.I. 11531) at the North Dakota Experiment Station. It has rough awns, short rachilla hairs and colorless aleurone. Dickson is similar to Trophy in date of heading, plant height and straw strength. Test weight has been slightly greater than for Trophy and equal to Larker.

In four years of testing at several North Dakota locations Dickson has outyielded Larker, Trophy, Traill and non-malting varieties. Its greatest advantage has shown during years of high incidence of prevalent foliar diseases.

Incorporated in Dickson is field resistance to spot blotch, net blotch and Septoria leaf blotch. Like most presently grown varieties, it is resistant to stem rust but susceptible to loose smut.

Industry has not classified Dickson for malting and brewing but plant scale tests are being conducted.

Breeders and foundation seed is being allocated to cooperating States for 1965 seeding. Foundation seed will be allocated to North Dakota seed growers for certified seed production in 1965.

Barley (cont.)

Godiva (C.I. 10641) is a hull-less, six-rowed, spring barley developed by the Utah Experiment Station and USDA. It was selected from the cross Bonneville x Nepal 1.

Godiva is noted for its high yield, stiff straw, ease of threshing, and possession of some disease resistance. It is especially adapted to fertile irrigated lands of the intermountain region. Godiva does not perform well on dry land or on soil of average or lower fertility.

In 8-year tests at Logan, Godiva averaged 113 bushels compared with 109 for Bonneville (C.I. 7248) and 78 bushels for Trebi (C.I. 936). Five year averages in irrigated regional tests were 91 for Godiva, 80.8 for Trebi. Lodging percentages in the regional tests were Trebi 44 and Godiva 7.6.

Hypana (C.I. 11772) is a new feed barley developed cooperatively by the Montana Agricultural Experiment Station and USDA. Seed supplies will be distributed through the Montana Seed Growers Association, Bozeman, Montana.

Originated from Glacier x Compana cross, Hypana is a 2-rowed, semi-smooth-awned, spring barley, bred to replace Compana.

In irrigation and dryland tests in Montana, Hypana has averaged 4 percent higher yields than Compana. The new variety has larger seed, is 20 percent taller than Compana and is more resistant to lodging. Hypana should be adapted to dryland production in barley areas in the Northern Great Plains.

Tokak is a two-rowed, bearded winter barley released by the New Mexico Plains Branch Experiment Station. It is a Turkish variety, introduced in 1949. In dryland tests (1958-1962) Tokak outyielded the next best variety 30.6 bushels to 28.3. In irrigated tests, begun in 1961, its lead lengthened to 11.6 bushels. Tokak is a late variety, of intermediate height with slender willowy stems; heads are long and nodding when ripe. Under New Mexico conditions where tested, it is reported that Tokak has performed well in terms of yield, winterhardiness, lodging and shattering. Since the seed is large, use of heavier than usual seeding rates is suggested.

Rice

Bluebelle is a long-grain rice, especially adapted to the rice growing areas of Texas. It was developed cooperatively by Texas Experiment Station and USDA. It matures about a week after the very early Belle Patna, with shorter, strong straw. Both varieties are especially suitable for double harvesting. Bluebelle yields have been consistently higher than those of Belle Patna on first crop cutting, but lower on second or stubble cutting.

Kernels of Bluebelle are similar in size and shape to those of Bluebonnet 50. They are equal to Belle Patna and Bluebonnet 50 in milling quality, with similar cooking and processing characteristics.

Seed may be obtained from the Rice-Pasture Research and Extension Center, Beaumont, Texas.

Sorghum

Plantation Pride is a new sorghum variety, resistant to birds, insects and foliar diseases - developed by Florida Experiment Station. It originated from a cross of Cuban Guinea and Leoti-Red. Through successive selfings the progeny were segregated, then selected for bunch head type, foliar disease resistance, awned lemmas, and high grain yields. Plantation Pride is quite uniform, a high yielder with a high proportion of grain to forage, vigorous, disease resistant and awned. Overall height ranges from 5-8 feet, heads are erect, elongated, and bunch-type but open enough for ventilation to prevent molding. Its kernels are ovate, light tan and partially covered by reddish-brown glumes.

Soybeans

The soybean variety, A-100, is a farmer selection developed by Anderson Brothers of St. Peter, Minnesota. It originated from a single plant selected in 1954 from an unknown variety. Anderson Brothers and the Minnesota Experiment Station have entered a cooperative agreement for production of breeder and foundation seed. The variety will be certified.

In group I Uniform tests, A-100 has averaged 3 to 4 days earlier than Harosoy and 7 days later than Chippewa, comparing in maturity to Blackhawk. It equalled or outyielded Harosoy, Lindarin and Chippewa. It is similar in height to Chippewa and Lindarin. Lodging resistance compares with Chippewa, exceeding Harosoy, Lindarin and Blackhawk. The seeds are yellow with buff-colored hila. Flowers are white; pubescence, grey. Oil content is slightly higher than for Chippewa, Lindarin and Harosoy.

Soybeans (cont.)

From about 2900 bushels of foundation seed distributed in 1965, certified seed will be available for 1966 planting. In addition, uncertified seed has been grown by farmers in southern Minnesota and northern Iowa since 1959.

A-100 will likely replace acreage of Blackhawk, Harosoy and Lindarin. It may replace some acreage of Chippewa.

Adelphia, a soybean variety of Group II maturity, was released by the New Jersey Station in 1964. It originated from a cross of an F₇ line from Lincoln x Ogden with Adams. As C-1225, Adelphia was included in the Uniform Tests in 1960 and 1961, but it was not superior in the Middle West. Beside yielding very well in New Jersey, Adelphia was outstanding for seed quality in seasons when other varieties were downgraded for moldy seed caused by pod and stem blight. Very good lodging resistance is another strong point.

Plants are low to medium in height with medium to heavy stems and stiff branches. The flowers are white and the pubescence is gray. The seed is medium-sized, yellow with a light brown hilum. Yields in New Jersey tests are about equal to Kent, better than Bethel and Clark. Oil and protein contents are about average and quite acceptable to processors.

Adelphia appears to have a special place on the mid-Atlantic coast where pod and stem blight is a major problem. The variety is susceptible to Phytophthora root rot but that is not a problem in the area.

Amsoy, a soybean variety of Group II maturity, was released this summer by USDA and Experiment Stations of Illinois, Indiana, Iowa, Minnesota, Missouri, Nebraska and South Dakota. Although this new variety is not phytophthora root rot resistant, it excelled in yields at 24 of 27 regional uniform test locations ranging from New Jersey to Nebraska 1961-1964.

Amsoy was selected as a F₁ plant at the Iowa Station from the cross Adams x Harosoy made in 1952. The plant is upright in growth habit. The flower is purple and the pubescence, grey. Seeds are hila are yellow. Seed will be distributed for 1966 planting to certified seed growers.

Dare was released August 1, 1965, by USDA and Agricultural Experiment Stations of Maryland, Missouri, North Carolina, Oklahoma and Virginia. Of maturity group VI, the variety is adapted to the upper-Delta and mid-Atlantic areas. Seed should be available in 1967.

Dare has white flowers and gray pubescence. Seeds are yellow with buff hila. It is resistant to purple stain and seed mottling, and to the leaf diseases bacterial pustule, wildfire, and target spot. It is moderately resistant to phytophthora root rot.

Soybeans (cont.)

Dare matures about four days earlier than Hood. Its seed size is slightly larger than Hood or Lee. It averages somewhat higher oil and lower protein than Hood or Lee.

Prior to release it was identified as N59-6972.

Davis, a soybean variety of Group VI maturity, was released by the Arkansas Agricultural Experiment Station on August 15, 1965. It matures about 3 days earlier than Lee and is adapted to the northeastern and central portions of Arkansas.

The variety has white flowers, gray pubescence, and yellow seeds with buff hila. It has a good resistance to phytophthora rot.

Davis, which before release was identified as R54-171-1, originated from a cross of D49-2573 x N45-1497. One parent (D49-2573) is a selection from Roanoke x N45-745. N45-745 is a bacterial pustule resistant strain from Ogden x CNS. The other parent (N45-1497) is a high oil selection from Ral soy x Ogden.

Pickett, the first yellow-seeded soybean variety resistant to the cyst nematode, was released by the Crops Research Division and the Experiment Stations of Arkansas, Missouri, North Carolina, Tennessee and Virginia, on July 1, 1965. A late variety, somewhat comparable to Lee, Pickett appears to be best suited to the Upper Mississippi River Delta region. Registered seed will be available in 1967.

Pickett originated from a cross of (Lee (4) x Peking) x (D49-2491(6) x Dorman) at North Carolina. Before release it was identified as NC-1-2-2. It has purple flowers, gray pubescence, and yellow seeds with dark brown hila. It is of the same maturity as Lee (Group VI). It is resistant to bacterial pustule, wildfire, and target spot, and has good seed holding characteristics.

Pickett has good resistance to strains of the cyst nematode in North Carolina, Missouri, and Tennessee, but like Peking, is susceptible to the strain at Holland, Virginia.

It is recommended for production only on cyst nematode-infested land. Seed will be available in 1967.

Soybeans (cont.)

Semmes, a variety with resistance to several important diseases, the past summer by the Arkansas and Mississippi Experiment Stations and USDA. Diseases to which the new variety is highly resistant included Phytophthora root rot, bacterial pustule, wild fire and target spot. Semmes is susceptible however to the root knot nematode (melordogyne incognita var. acrita). In comparison with Lee, Semmes is about 4 days later, its plants slightly taller, and it bears its lowermost pods higher from the ground. The flowers are purple, pubescence grey, seeds are yellow and about the same size as Lee. The hila are described imperfect-black. The plants stand and hold their seed well. Certified seed will be produced in 1966.

Traverse soybeans are similar in maturity to Grant and 3 to 4 days earlier than Chippewa. The yield is similar to Grant, superior to Ottawa Mandarin, but slightly less than for Chippewa. In plant height, Traverse averages about 2 inches taller than Grant and 1 to 3 inches shorter than Chippewa. Its lodging resistance excels Grant, is similar to Chippewa. Traverse produces beans of excellent quality - large, shiny, yellow with colorless hila. Protein and oil content compare with Grant and Chippewa. Flowers are white; pubescence grey and pods brown.

Traverse originated as an F₅ selection from a Lincoln x Ottawa Mandarin cross in the Minnesota Experiment Station and USDA cooperative program. With some 1400 bushels distributed to growers in 1965, certified seed will be available in 1966.

Because of seed characteristics, this variety may be useful in oriental markets for human food products.

Prior to release it was identified as M-417.

Flax

Dillman is a new, early maturing, cold and disease-tolerant flax variety adapted to central and northern portions of the flax producing area of South Texas. It will supplement, but not necessarily replace, the first cold tolerant variety, Caldwell, released in 1961. Dillman was developed by the Texas Agricultural Experiment Station and USDA. Developed from a hybrid between Turkey x Roman Winter, Dillman was carried in preliminary trials as Selection 10-7, C.I. 1909.

Dillman is similar to Caldwell but earlier maturing. Fall seeded plants develop a rosette type growth and remain relatively dormant through the winter months. Many basal branches are formed during this period; the number developing into seed branches depends on spring growing conditions. The date of blooming averaged 5-10 days earlier than Caldwell, with maturity dates about the same as for DeOro and Redwood.

Flax (cont.)

In plant type Dillman is similar to Caldwell but slightly shorter. The flowers are blue, the seed brown and relatively small.

In tests, Dillman was resistant to races 228, 258 and 299 of flax rust. It showed mixed resistance to races 297 and 312; some plants are resistant, others susceptible.

Safflower

Frio safflower, released by the Arizona Experiment Station and USDA, is an F_5 selection from a cross between A5731-5 and a high oil line received from Pacific Oilseeds, Inc. Compared with Gila, the dominant variety in Arizona, Frio, in 15 trials over a 4-year period, produced 3095 lbs. seed per acre of 39.3 percent oil content, or 1223 lbs. oil per acre. Gila yielded 2908 lbs. seed containing 36.4 percent oil or 1055 lbs. oil per acre. Frio is more resistant to Arizona strains of Phytophthora rot. It is taller than Gila, a few days later, and the blooming period lasts longer.

Outside Arizona Frio averaged 2190 lbs. seed per acre with an oil content of 38.9 percent in 14 irrigated trials in 1964. Gila averaged 2216 lbs. seed, 36.8 percent oil. In 20 non-irrigated trials, yields were 1005 lbs. for Frio with 36.1 percent oil and 1119 lbs. for Gila, 36.8 percent oil.

Seed is being increased by Arizona Crop Improvement Association.

Sesame

Baco, a direct-combine sesame variety, was developed for the arid and semiarid areas of Texas for both irrigated and dryland production. It is a pure line F_5 selection from a cross between two indehiscent sesame strains made at College Station, in 1958. Selections, reselections and preliminary yield tests of these selections were made subsequent to the F_5 selection in 1961. It is released in Texas on the basis of favorable yield test data obtained during 1960-64 and on superior performance in field-scale combine trials in 1964-65.

Plants of Baco are short, erect-branching, resistant to lodging and medium-early maturing. The indehiscent capsules are bicarpellate, medium-long papershell, grow one capsule per leaf axil and are easily threshed. Seed are tan, medium-size, uniform and comparable to the dehiscent variety Margo in size, shape and color.

Sesame (cont.)

Baco produced 91 percent as much seed per acre as Margo, the predominant dehiscent variety, in 10 tests at College Station and Lubbock in 1960-64. In 20 regional yield tests in Texas, Mississippi, Oklahoma, South Carolina, Florida and California in 1962-63, Baco produced 90 percent as much seed as Margo. Baco appears well adapted to sesame-growing areas of Texas, and based on regional yield data, it appears to be widely adapted throughout the southern United States.

Foundation seed stocks of Baco were released to commercial seed growers by the Texas Experiment Station in May 1964. Seed supplies for commercial growers were available in 1965.

Paloma is a combine type sesame variety, released jointly by Texas Experiment Station and USDA. The plants are medium in height, nonbranching, resistant to lodging and medium early maturing. The capsules are indehiscent, bicarpellate, medium long and are borne three per leaf axil. Seed are uniform, medium sized and white. Paloma and Baco yielded almost identically in 10 tests at Lubbock and College Station (1960-1964) - about 9 percent below Margo. The capsules of Paloma, unlike those of Baco, are not completely non-shattering. Paloma is recommended in Texas for both irrigated and dryland production. Its production can be mechanized. Production of certified seed got underway in 1965.

Cotton

Hopicala is described as an upland cotton with a range of adaptability in the West. It was developed cooperatively by USDA and the Arizona and New Mexico Experiment Stations from a cross of native Hopi cotton and Acala.

Hopicala produced excellent yields in Western Regional tests as well as at a range of locations in New Mexico and Arizona. It has excellent fiber qualities and a moderate degree of tolerance to verticillium wilt. The variety is reported to be well adapted to harvesting with a spindle-type picker. Plants are sturdy, upright, close-fruited, rather leafy and mature relatively early. It is recommended by the Arizona Agricultural Experiment Station for commercial production in Arizona (except the Colorado River basin and the Safford area).

A limited quantity of breeder seed is available to bona fide seed producers from the Department of Plant Breeding, University of Arizona, Tucson.

Kenaf

Everglades 41 and Everglades 71 are companion varieties developed by Florida Experiment Station and USDA with the following objectives in view; rapid growth, high yield, insect and disease resistance and adaptation to mechanical harvesting. Both will produce fiber crops on Everglades peat in 90-100 days; they are well suited to mechanical harvesting - especially Everglades 41; and both have outyielded their parent El Salvador, a standard variety. Everglades 41 and 71 are resistant to the three known races of *C. hibisci*, the causal agent of anthracnose. Susceptibility of kenaf to root-knot nematodes remains a serious problem. No variety yet tested in Florida is resistant. However, Everglades 71 has shown some tolerance to a root disease-nematode complex involving *Pythium*, *Fusarium*, *Rhizoctonia* and nematodes.

Alfalfa

Europe is a selection from a Flemish population. Adaptation is the corn belt and North Atlantic states as well as Alabama, Kentucky, Mississippi and Tennessee. Europe has a very erect growth and excellent standability under adverse weather conditions, starts growth early in the spring, and recovers quickly after cutting. It is similar to other Flemish varieties in disease and insect resistance. Is not wilt resistant. Growth habit and winter hardiness are comparable to currently accepted Flemish varieties. Certified seed became available in 1965.

Ladak 65 is a synthetic variety consisting of 49 clones selected from old Ladak fields on the basis of progeny performance. It is adapted for dryland and two-cutting irrigated areas for hay. This variety was developed primarily for Montana and testing has been limited primarily to Montana because of a limited seed supply. Flower color is same as Ladak; yellows and whites are represented in parent clones. It is similar to Ladak in other respects, except that Ladak 65 may be slightly less fall dormant than Ladak. It is more resistant to bacterial wilt than Ladak. Certified seed becomes available in 1965 or 1966.

Norseman was selected for winter hardiness, uniformity of recovery, growth habit, and resistance to bacterial wilt from a certified lot of Ladak alfalfa. Primary use is for hay and/or grazing, and for long term rotation in areas where bacterial wilt and winter-kill limit the use of other varieties. These areas include the dryland and northern 1- to 2-cut alfalfa region in Minnesota, North and South Dakota, Wisconsin, Montana, and Michigan. Norseman has variegated flowers - full range from purple to yellow - wide crowns, early fall dormancy, slow recovery, prostrate to semi-decumbent growth habit, and fine stems. An occasional plant has sickle-shaped pods. Certified seed became available in 1965.

Arrow leaf Clover

Yuchi (P.I. 233816) like Amclo, (see New Crop Varieties No. 5) stemmed from a 1956 introduction from Italy by the Southern Plant Introduction Station. The new variety was released by Alabama Experiment Station. Arrowleaf clover is a winter annual, comparable in many respects to crimson clover. With favorable moisture, Arrowleaf continues to grow several weeks after crimson matures. The crop combines well and given the chance, reseeds itself. A special inoculant is required.

Bermudagrass

Midway bermudagrass, released by Kansas Experiment Station, represents a single plant selected for winter hardiness and desirable turf characteristics from over 20,000 polycross progenies at Manhattan. It is a medium textured lawn grass that produces relatively few seed heads. It is not so coarse as common bermudagrass nor so fine as African bermudagrass. Its ascending habit of growth contributes to slower development of thatch. Density and thatch production of Midway are less than for U-3 bermudagrass; its winter hardiness, greater. This variety is expected to find its ultimate use as a lawn grass in Southwestern Kansas. Midway rated most resistant to mite damage and leafspot in Arizona field trials. No pests nor diseases have been reported in Kansas trials. Resistance to Spring Dead Spot is untested.

Tifdwarf, a bermudagrass for golf greens, has been rated equal or superior to Tifgreen, now the top golf-green grass in the South. Both were developed cooperatively by USDA and the Georgia Coastal Plain Experiment Station at Tifton. Tifdwarf is believed to be a mutation of Tifgreen.

Tifdwarf has tiny blades that hug the ground so closely that many of them are never cut by the greens mower. This trait helps the grass tolerate a 3/16-inch cutting height much better than Tifgreen. Its softer blades and fewer seedheads add further to its good putting qualities. Both grasses appear to be equal in disease resistance but Tifdwarf is a little more winterhardy in tests at Beltsville, Md.

Planting stock is obtainable from the Georgia Crop Improvement Association.

Kentucky Bluegrass

Cougar (P-4358) is a low growing dark green bluegrass, developed jointly by Washington Experiment Station and USDA. Its leaves, somewhat wider than Merion, form a dense mat that can withstand close clipping - 1/2 inch height - with no serious loss. It is more strongly rhizomatous than Merion.

Cougar is adapted to the inland areas of the Pacific Northwest from the Cascade range east to the Rocky Mountain uplift. In general, the variety is considered similar to Merion and Newport in adaptation and growth habit.

Cougar responds to nitrogen, produces an excellent turf at high rates of nitrogen and maintains excellent color during the growing season. Turf density and color were unsurpassed by any other bluegrass tested at Pullman. Equal or superior to other bluegrasses in seedling vigor, it showed resistance to Helminthosporium, ranking slightly below Merion bluegrass and above Delta and Park bluegrass. It excels Merion in mildew and rust resistance at Pullman, but is slightly more susceptible to rust than Delta and Newport.

Seed is about 20 per cent larger than seed of common bluegrass, with less webbing at the base, thus reducing processing problems. Cougar is 10 days to 2 weeks later in maturity than common Kentucky bluegrass and resists seed shattering for 15 days after maturity, as compared with 3 days for Merion bluegrass in seed fields. It is the only bluegrass tested that has little or no after-harvest seed dormancy.

The selection was propagated at the Soil Conservation Nursery unit at Pullman as P-4358. It originated from a Danish introduction first propagated for four generations to eliminate barren plants. Cougar resulted from a process of selection and reselection begun in 1952.

Ryegrass

Florida Rust Resistant ryegrass, a product of Florida Experiment Station, is characterized by excellent leaf rust resistance, early maturity and upright growth habit. Development began in 1945 with discovery of a local seed stock from which considerable ryegrass had persisted for years in a region of heavy rust infection. In 1950, 171 plant selections were space-planted in isolation. Interspersed were rows of completely susceptible common ryegrass, inoculated to insure heavy leaf infection. Preceding pollination, all but resistant plants of desirable type were removed. These were allowed to cross. Seed from the third generation of such procedure were increased as foundation seed. In State and Southern Regional ryegrass trials Florida Rust Resistant has in general shown yields quite similar to Gulf and some 10 percent better than Common. It is earlier than Gulf and Tifton 1 and considerably earlier than Common. However, some variations may be noted in such respects as plant type and maturity at the early stages.

Ryegrass (cont.)

Magnolia annual ryegrass is the product of cooperative research conducted by the USDA and the Mississippi Experiment Station. This variety is highly resistant to crown rust and has some tolerance to certain leaf spot diseases.

Magnolia is a blend of 2 rust-resistant selections, Stoneville 3 and State College 7. The 2 selections, which trace back to 2 plants of La Estanzuela 284, were developed and maintained in isolation through rigorous selection for rust resistance among progenies following repeated cycles of selfing. Subsequently Stoneville 3 and State College 7 were formulated by compositing 3 and 6 lines, respectively. Because of the possible intercrossing of annual and perennial types in its past history the fluorescence test gives a negative reaction for 25 to 50 percent of Magnolia seedlings.

In 1-year grazing trials at State College, Magnolia produced 986 lbs/acre of total digestible nutrients compared with 985 lbs. and 694 lbs. for Gulf ryegrass and oats, respectively. The 2-year average from tests at two locations in Mississippi showed that Magnolia produced 9 to 10 percent higher hay yields than Gulf.

Limited quantities of certified seed of Magnolia ryegrass are expected in seed trade channels by the fall of 1966 or 1967.

Black Gramagrass

Sonora black grama (Bouteloua eriopoda), developed jointly by the Arizona Experiment Station, Agricultural Research Service and Soil Conservation Service, USDA, was released June 1, 1965.

The variety, named for the Sonora Desert of the southwestern United States and northern Mexico, was developed from 11 vegetative and 47 seed accessions in Arizona and New Mexico. A spaced plant source nursery was established in 1959 and data obtained on seed production and forage characteristics. Seventy-nine selected plants were vegetatively increased and re-evaluated. Re-selected plants were established in two crossing blocks, experimental A-4567-1 with 12 selections and experimental A-56-1 with 7 selections. Based on polycross progeny performance for seed-set components and forage characteristics, 12 selections were vegetatively established in a crossing block and progeny tested in 1961 and 1962. This experimental constitutes the 12 clone synthetic variety Sonora.

Sonora is outstanding for leafiness, vigor, forage production, vegetative spread, components of seed-set, and seed yield in comparison with seed stocks that are currently available.

Tall Fescue

Kenwell tall fescue is the product of a Kentucky Experiment Station and USDA cooperative project aimed at improving the palatability of this grass without sacrificing its good qualities. Some reduction in its competitive ability has also resulted.

Kenwell is a composite of 43 highly palatable inbred clones, representing three inbred lines, all of which were better grazed than Ky. 31 fescue. In subsequent test cattle, given free choice, have consistently shown a preference for Kenwell. In 4 tests during a 6-year period, a grazing index of 1 (best grazed) to 9 (ungrazed) was used to describe palatability. Yearly comparisons with Ky. 31 favored Kenwell by as much as 2.0 to 7.0 and never less than 4.8 to 8.0. In another test, cattle consumed 44 percent more dry matter of Kenwell than Ky. 31. Little difference has been noted in performance of the cattle, indicating the two varieties are essentially equal in nutritive value.

Kenwell has greater tolerance to certain leaf diseases than Ky. 31 and other commercial varieties. It maintains better color during dry periods and into the winter. It is approximately 7 days later in flowering than Ky. 31. Seed will be produced on a limited generation basis. Inquiries may be directed to Kentucky Seed Improvement Association.

Guar

Hall and Mills are disease resistant guar varieties developed cooperatively by Texas Experiment Station and USDA. They have been released to certified seed growers in Texas and Oklahoma. Both originated as single plant selections, made in 1961 from two heterogeneous introductions from India. The selections bred true. The new varieties have been tested at four locations in each Oklahoma and Texas, and at Beltsville, Md. Both appear well adapted to guar areas of Oklahoma and Texas. The new varieties have outyielded the disease susceptible varieties Texsel and Groehler by some 40 percent where compared.

Mills is an early maturing variety. Plants are short and of fine branching habit, with small racemes of above average sized pods well distributed on the main stem and branches. Leaves and stems are pubescent. Seed is above average in size, averaging about 3.4 grams per hundred. Mills may be especially suited to those situations when planting is late.

Hall is a moderately late maturing variety, slightly later than Brooks. It is considered a full season variety for the guar production area. Plants are relatively tall, coarse, and of fine branching growth habit. Small racemes are well distributed over the main stem and branches. Leaves and stems are glabrous. Seed is of average size, running slightly less than 3.0 grams per hundred. Hall is recommended primarily for those situations where normal planting dates are possible.

Tobacco

Burley 49 a new burley variety that is resistant to several diseases was released to growers in 1965.

The new variety has more resistance to black root rot than any previously available; a high level of resistance to black shank, wildfire, and tobacco mosaic; and a low but useful level of resistance to fusarium wilt. It also has good resistance to lodging.

Burley 49 was developed jointly by the Tennessee Experiment Station and USDA. It is especially recommended for use where black root rot, black shank, or both are problems. Under these conditions it produces much higher yields of good quality tobacco than susceptible or even moderately resistant varieties. Where these two root diseases are not problems, Burley 21 is likely to produce somewhat higher yields of better quality tobacco than Burley 49.

Coker 298 from the cross Coker 139 x Coker 156 was developed by Coker Pedigreed Seed Company. In North Carolina tests it produced a high yield of tobacco, lemon to light orange in color, with fair texture and thin body. It was similar to C-187-Hicks in field appearance and soil requirements. The new variety rated highly resistant to black shank, and moderately resistant to Granville wilt and fusarium wilt.

N.C. 2326 was developed by the North Carolina Experiment Station where in tests it has compared quite closely with Hicks. The new variety has been a little higher in yield and quality index. In field appearance and soil adaptation the two were similar. N.C. 2326 rated moderately resistant to black shank and fusarium wilt. It showed little or no resistance to Granville wilt.

N.C. 2512 is a high-yielding, multiple disease resistant flue-cured tobacco variety of high quality. This variety results from the following crosses: (8038 x Hicks Broadleaf) x NC 75. Breeding line 8038 was a root-knot nematode-resistant line involving Coker 139 and Bel 4-30. Seed available for commercial seed producers in 1965 are of the 7th filial generation.

N.C. 2512 has low resistance to black shank, low resistance to bacterial wilt, moderate resistance to fusarium wilt, and high resistance to root-knot nematodes. Also, it has very marked tolerance to the destructive brown spot leaf disease. This enables this variety to hold exceptionally well during the harvest season and normally persists from 1 to 3 weeks longer in the field than most other varieties. This variety should be allowed to ripen fully before harvest.

Speight G-36 was developed by Speight Seed Farms from a cross (DB 102 x Hicks) x Ox. 1-181. In North Carolina tests the variety produced high yields but the quality index and price were below those of Hicks. Plants were taller than Hicks. No tendency to leaf brittleness was noted in the field or barn. The new variety flowered late, produced relatively few ground and leaf suckers and appeared to have wide adaptation. It rated highly resistant to black shank, moderately resistant to Granville wilt and susceptible to fusarium wilt.

Va. 115 originated at the Virginia Experiment Station, from a cross of Hicks x Coker 139. It resembles the Hicks parent to a great extent. Its black-shank resistance is high, yield and quality are good. The original cross was made in 1955. Selection followed through 9 generations leading to the combining of seed from 55 plants for commercial increase in 1964.

Va. 331 originated at the Virginia Experiment Station from a cross of Vesta 55 on Walkers Broad Leaf. A single F₄ plant in the 1956 crop was the base for line selections in 1957 with reselection following each year for better plant type.

In plant type, Va. 331 is similar to Walkers Broad Leaf. Leaves are large, pointed, and droop slightly from the middle to the tip. But leaf spacing is slightly wider with Va. 331. And at maturity the leaves are not as heavy and droop less. During wind storms the top leaf may "turn over" more than other varieties. Under conditions favoring rapid and heavy growth, the leaves may become brittle and break more than leaves of other varieties.

The cured leaf is predominantly reddish brown and resembles Walkers Broad Leaf; under average growing conditions, the leaf of Va. 331 is likely to be slightly thinner. Leaf quality is generally good and meets market demands for a thin leaf. Since flea beetles in the field cause more severe injury on thin leaf tobaccos, the quality of Va. 331 may be reduced during years of heavy flea beetle infestation. The veining of the leaf is light, and the lateral veins are widely spaced.

Black shank resistance of Va. 331 is moderate. Tests indicate that under average disease conditions the resistance will be satisfactory, but under severe conditions some losses can be expected.

Md. 59 is a new black shank resistant Maryland variety. It has fewer but larger leaves than the standard Maryland Catterton variety. It has a higher percentage of bright leaf tobacco and exceeds other Maryland varieties in price per hundred pounds. The variety was derived from a cross of Maryland Robinson x Florida 301, a black shank resistant Florida cigar-wrapper tobacco. The breeding work was conducted by Dr. O. D. Morgan, University of Maryland.

Tobacco (cont.)

Md. 609 is a black shank resistant Maryland variety with the same parentage as Maryland 59. Maryland 609 has a spreading leaf character and resembles the variety Catterton. The leaf is a medium broadleaf, more rounded than Maryland 59. Its performance in variety tests and the disease resistance has been comparable to that of Maryland 59.

Florida 15, a new cigar wrapper tobacco, was developed at the Florida Experiment Station with the primary aim of quality improvement together with preservation of other desirable characters. It originated from a multiple cross involving Dixie Shade, No. 63, Connecticut AST and Sumatra. Florida 15 exhibits more vigorous growth characteristics in the plant bed than Dixie Shade the leading local variety; Florida 15 has larger upper leaves, and a flatter leaf which reduces damage. It may exceed Dixie Shade by as much as 200 pounds per acre in yield but produces about the same percentage of off-color grades. However, there is a lower percentage of dark tobacco and less tendency to lose tensile strength. Foundation seed is available.

